

ABSTRACT

Various embodiments of the invention relate to an apparatus and method for efficiently implementing out-of-order servicing of read requests originating from an input/output (I/O) interface with minimal additional storage. For example, a number of read entries may be generated from data read requests stored in a first-in-first-out in a first order. The read entries are stored in a storage device and each read entry identifies internal data reads to read data to service the data read request to which the read entry corresponds. A controller coupled to the storage structure may then submit the internal data reads a central arbiter to read data in a second order that is different than the first order. Moreover, the controller also allows the second order to include internal data reads from one read entry, before completing servicing of another partially serviced read entry, thus providing "simultaneous" servicing of several read entries.